

REMARKS

Claims 1-30 are pending in the present application. Claims 6, 16, and 26 are amended; and claim 31 is added. Support for claims 6, 16, 26 and 31 is found at least on page 4 and on pages 17-18 of the present specification. Reconsideration of the claims is respectfully requested.

I. 35 U.S.C. § 103, Alleged Obviousness Based on Tawil and Nolan

The Office Action rejects claims 1-30 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Tawil et al. (U.S. Patent Number 6,421,723 B1), hereinafter referred to as *Tawil*, in view of Nolan et al. (U.S. Patent Number 6,640,278 B1), hereinafter referred to as *Nolan*. This rejection is respectfully traversed.

As to claims 1, 11 and 21, the Office Action states:

As to claim 1, Tawil, Method And System For Establishing A Storage Area Network Configuration, discloses a method for configuring a storage area network, the method comprising the steps of: collecting operating system data for a server, wherein the server is connected to a storage area network (Tawil, Abstract, col. 3, lines 5-15); However, Tawil does not explicitly disclose comparing operating system data for the server to operating system data of the storage area network; and configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network. Thus, the artisan would have been motivated to look into the related networking art for potential system and method for implementing comparing operating system data for the server to operating system data of the storage area network; and configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network.

In the same field of endeavor, Nolan, related Method For Configuration And Management Of Storage Resources In A Storage Network, discloses, a storage transaction interface is mapped to one of the configured data paths, and thereby controlled within a storage domain managed and configured in the storage domain manager (Nolan, col. 3, lines 1-12; col. 26, lines 24-55).

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention made to have incorporated Nolan's teachings of the storage management of resources in storage area network with the teachings of Tawil, for the purpose of providing for heterogeneous interoperability of storage systems and protocols and for secured centralized management, scalability and high performance (Nolan, col. 3, lines 13-20, col. 35, lines 48-67). ...

Claim 11 recites a system corresponding to the method of operations of claim 1. The system claim is obvious in that it is simply follows the logical implementation of the method of operations indicated in the referenced claims to perform each of logical steps of coordinating to configure a storage area network that results from the reference discussed above regarding the claim to the method of operations. Thus, the system described in claim 11 would have been obvious in view of the elements provided in the references, which correspond to the steps in the method of operations for the same reasons discussed above regarding claim 1. ...

Claim 21 is corresponding computer program product of claim 1; therefore it is rejected under the same rational set forth as in claim 1.

Office Action dated December 17, 2003, pages 2-5.

Claim 1, which is representative of the other rejected independent claims 11 and 21 with regard to similarly recited subject matter, reads as follows:

1. A method for configuring a storage area network, the method comprising the steps of:
 - collecting operating system data for a server, wherein the server is connected to a storage area network;
 - comparing operating system data for the server to operating system data of the storage area network; and
 - configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network. (emphasis added)

Neither *Tawil* nor *Nolan*, either alone or in combination, teach or suggest comparing operating system data for the server to operating system data of the storage area network; and configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network.

Tawil is directed toward a method and system that monitors signals of the storage area network to determine the number of initiators associated with the storage area network. During initialization of the storage area network, each initiator provides port login commands to each target accepting data for storage to identify the targets. An ID engine associated with an initiator determines the number of initiators by monitoring signals to identify and count port login commands provided by other initiators interfaced with storage area network and adding one to represent itself. An initiator's queue depth for a target accepting data for storage may be automatically adjusted based on the number

of initiators. The adjusted queue depth limits the number of commands that the initiator can send to a predetermined target based upon the number of commands that the target is able to accept. Initiators will wait to send commands to a target until the adjusted queue depth of the initiator indicates an ability by the target to handle the command.

Nolan is directed toward a system for managing storage resources in a storage network according to storage domains. Storage domain management is centralized and layered on top of existing storage area network hardware infrastructures. Storage domains are managed by assigning a logical storage extent to clients within a network, and by mapping storage resources in the network to the logical storage extents of the clients. The assignment of logical storage extents to clients is accomplished in an intermediate device or storage domain manager. Storage transactions are received by the intermediate device, and managed according to the configuration of the storage domain defined by the intermediate device.

Applicants agree with the Office Action that *Tawil* does not explicitly disclose comparing operating system data for the server to operating system data of the storage area network or configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network. However, despite the Office Action's allegations, Applicants respectfully submit that *Nolan* does not teach or suggest these features either.

In the rejection of claim 1, the Office Action refers to the following portions of *Nolan*:

In a preferred embodiment, the resources within storage domains are defined using virtual circuits which comprise a plurality of driver modules and configurable logic linking driver modules into data paths, which are implemented in pairs for redundancy in a preferred system. Each configured data path acts as a virtual circuit that includes a set of driver modules selected from the plurality of driver modules. A data storage transaction which is received at a communication interface is mapped to one of the configured data paths, and thereby controlled within a storage domain managed and configured in the storage domain manager.

Nolan, column 3, lines 1-12.

Using the button 1406 of FIG. 18, a LUN map routine is instituted which presents the image shown in FIG. 23. The LUN (Logical Unit Number) map is essentially a list 1550 of LUNs and their associated data. These will be displayed as a list of names and descriptions. The VC (Virtual Circuit) that is associated

with any given LUN is shown on this display. It is made visible when the user selects an entry from the LUN map and requests details.

The LUN map will show the existing list of LUNs by name, description, or other fields. Fields include:

Name 1551

Description 1555

Exported Status 1552

Host 1553

Storage Element(s) 1554

The LUN map allows:

Sorting based on various fields.

Filtering based on fields. This is only needed if more than one LUN is operated on at a time (for example, enable/disable).

Selecting a LUN for deletion or editing/viewing.

Defining and adding a new LUN.

Importing existing LUNs. (done via "Learn Mode" on hardware startup)

Adding a member and starting a Hot Copy Mirror process on a LUN.

Exporting, unexporting a LUN--this will basically start and stop the flow of data from the host.

Nolan, column 26, lines 24-55.

These portions of *Nolan* only teach that a storage domain manager controls data storage transactions. *Nolan* teaches that the resources are defined using virtual circuits, which link driver modules into data paths. When the storage domain manager receives a data storage transaction from an initiator, the data storage transaction is mapped to a configured data path. *Nolan* configures a data path; a data path is not an operating system of the server. *Nolan* does not teach or suggest comparing operating system data for the server to operating system data of the storage area network; and configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network.

In *Nolan*, a storage domain server (manager) receives a data storage transaction from an initiator. The storage domain server provides for virtual Logical Unit Numbers (LUNs) on a per initiator basis. The storage domain server maps the data storage transaction request to a virtual circuit corresponding to a virtual LUN using a user input screen. *Nolan* does not teach or suggest comparing operating system data for the server to operating system data of the storage area network; and configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network.

Therefore, since *Tawil* and *Nolan* do not teach comparing operating system data for the server to operating system data of the storage area network; and configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network, the alleged combination of *Tawil* and *Nolan* does not teach or suggest these features.

Moreover, there is no teaching or suggestion in either of *Tawil* or *Nolan* regarding the desirability of combining these two systems in the manner alleged by the Office Action. There is no teaching or suggestion in *Tawil* to the effect that it would be desirable to provide a centralized storage area network manager, such as taught in *Nolan*. To the contrary, *Tawil* addresses the problem of initiators and targets becoming too busy to communicate with each other, which has nothing to do with a centralized storage area network manager. Thus, *Tawil* would not be motivated to include a centralized storage area network manager. Moreover, there is no teaching or suggestion in *Nolan* regarding the desirability to determine the number of initiators in a storage area network. The invention of *Tawil* would not be useful to *Nolan*'s centralized storage area network manager since *Nolan*'s initiators do not send commands directly to the storage resources. The only teaching or suggestion to even attempt to combine *Tawil* and *Nolan* is completely based on a hindsight reconstruction having first had benefit of Applicants' claimed invention and disclosure.

Thus, neither *Tawil* nor *Nolan*, either alone or in combination, teach or suggest comparing operating system data for the server to operating system data of the storage area network; and configuring an operating system of the server based on the comparison, wherein the server operating system is automatically configured to allow the server to access the storage area network, as recited in claims 1, 11 and 21. At least by virtue of their dependency on claims 1, 11 and 21, respectively, neither *Tawil* nor *Nolan*, either alone or in combination, teach or suggest the features of dependent claims 2-10, 12-20 and 22-30. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1-30 under 35 U.S.C. § 103(a).

In addition, with regard to claim 31, neither *Tawil* nor *Nolan*, either alone or in combination, teach or suggest the specific feature wherein the operating system data for

the server and the operating system data of the storage area network identify a type of operating system. *Nolan* does not teaches or suggest identify a type of operating system.

Additionally, with respect to claims 6, 16 and 26, *Tawil* and *Nolan*, either alone or in combination, do not teach or suggest that comparing operating system data for the server to operating system data of the storage area network identifies an operating system as being at least one of a Solaris™ operating system, an AIX™ operating system, and a Windows NT™ operating system. As discussed previously, *Tawil* and *Nolan* do not teach or suggest comparing operating system data for the server to operating system data of the storage area network. *Nolan* only teaches that the initiators consist of a variety of platforms.

Additionally, with respect to claims 8-9, 18-19 and 28-29, *Tawil* and *Nolan*, either alone or in combination, do not teach or suggest conveying an error message, wherein the error message indicates that the connected server operating system is not supported by the storage area network. *Nolan* does not teach or suggest that an operating system may not be supported by a storage area network.

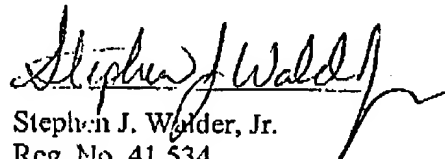
Thus, in addition to being dependent on their respective independent claims, claims 2-10, 12-20 and 22-30 are also distinguished over the *Tawil* and *Nolan* references based on the specific features recited therein.

II. Conclusion

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,

DATE: March 16, 2004



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